

Claims

1. Microspheres for allergy therapy containing antigens and/or DNA of antigens, characterized in that the microspheres have a binding constant K_B of at least $1 \times 10^4 \text{ M}^{-1}$ toward the specific carbohydrate residue of intestinal and/or nasal epithelial cells.
2. Microspheres for allergy therapy according to claim 1, characterized in that the microspheres have an avidity K_B of at least $1 \times 10^{10} \text{ M}^{-1}$ toward the specific carbohydrate residue of intestinal and/or nasal epithelial cells.
3. Microspheres for allergy therapy according to claim 1 or 2, characterized in that the microspheres have substances on their surface which increase the adhesion to mucosal cells.
4. Microspheres for allergy therapy according to any of the above claims, characterized in that the specific carbohydrate residue is alpha-L-fucose.
5. Microspheres for allergy therapy according to any of the above claims, characterized in that the substances on the microsphere surface are lectins.
6. Microspheres for allergy therapy according to claim 5, characterized in that the substance on the microsphere surface is a nontoxic lectin.
7. Microspheres for allergy therapy according to claim 5 or 6, characterized in that lectin is edible.
8. Microspheres for allergy therapy according to claims 5-7, characterized in that the lectin is *Aleuria aurantia* lectin.
9. Microspheres for allergy therapy according to any of the above claims, characterized in that the microspheres have a diameter of from 0.1 to 100 μm .
10. Microspheres for allergy therapy according to any of the above claims, characterized in that the skeleton of the microspheres consists of polymers.
11. Microspheres for allergy therapy according to claim 10, characterized in that the skeleton of the microspheres consists of polymers with functional groups.

12. Microspheres for allergy therapy according to either of claims 10 and 11, characterized in that the skeleton of the microspheres consists of biodegradable polymers or copolymers.
13. Microspheres for allergy therapy according to any of claims 9-12, characterized in that the skeleton of the microspheres consists of polylactic acid, polyglycolic acid or of poly(lactic-co-glycolic acid) copolymer.
14. Microspheres for allergy therapy according to any of claims 10 to 13, characterized in that the Aleuria aurantia lectin is bound to the polymers by a covalent bond.
15. Microspheres for allergy therapy according to any of the above claims, characterized in that the microspheres contain 0.1-20 wt.% of antigens and/or DNA of antigens.
16. Microspheres for allergy therapy according to any of the above claims, characterized in that the antigens and/or DNA of antigens are allergens and/or DNA of allergens.
17. Microspheres for allergy therapy according to any of the above claims, characterized in that the antigens are mimotopes of the allergen Phl p 5 and/or of the allergen Bet v 1.
18. A method for producing microspheres according to any of the above claims, characterized in that the microspheres are first loaded with antigens and/or DNA of antigens, and the microspheres are then functionalized.
19. Use of microspheres according to any of the above claims 1-17 for allergy therapy.